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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF AVISTA'S 2020
ELECTRIC INTEGRATED RESOURCE
PLAN

CASE NO. AVU-E-19-01

COMMENTS OF THE
COMMISSION STAFF

STAFF OF the Idaho Public Utilities Commission, by and through its Attorney of record, Edward Jewell, Deputy Attorney General, submits the following comments.

BACKGROUND

On January 30, 2019, Avista Corporation ("Avista") filed a petition requesting a six-month extension of the August 31, 2019 filing date for Avista's 2019 Integrated Resource Plan ("2019 IRP") due to numerous potentially impactful energy bills that were under consideration in the legislatures of Montana, Oregon, and Washington.

On February 22, 2019, the Commission issued a Notice of Petition and Notice of Modified Procedure establishing comment and reply comment deadlines for Avista's requested extension. Order No. 34250.

On April 16, 2019, the Commission issued a final order approving Avista's petition and granting a six-month extension until February 29, 2020. Order No. 34312.

On February 28, 2020, Avista filed its amended 2019/2020 Electric Integrated Resource Plan (“2020 Electric IRP”).¹

On March 25, 2020, the Commission issued a Notice of 2020 Electric Integrated Resource Plan and Notice of Intervention Deadline. Order No. 34609.

Idaho Conservation League (“ICL”), Avista, and Commission Staff are parties to the case.

Following the intervention deadline, Staff informally conferred with the parties regarding a procedure and schedule for the case. The parties presented a proposed schedule to the Commission. The Commission issued notice of the case and set a comment deadline of August 19, 2020, and a reply comment deadline of September 2, 2020.

On July 9, 2020, Staff held a virtual public workshop with both live-stream and telephonic options provided. This workshop provided Staff with the opportunity to discuss the 2020 Electric IRP, answer questions, and get feedback from Avista customers.

On August 5, 2020, the Commission conducted a public telephonic customer hearing to take testimony from Avista customers and members of the public.

STAFF REVIEW

Staff actively participated on the IRP Technical Advisory Committee, and believes Avista has met the IRP minimum requirements set forth in Commission Order No. 22299, and recommends the Commission acknowledge the Company’s 2020 IRP. This recommendation is based on Staff’s review of the Company’s IRP filing, the Company’s responses to audit and production requests, the Company’s additional analysis of the Colstrip coal plant, and Staff’s review of customer and stakeholder feedback received through a public workshop, hearing, and filed public comments. However, the IRP contains several significant shortcomings including but not limited to the coal plant retirement analysis, load forecasting, and future resource planning. Staff makes its recommendation to acknowledge the 2020 Electric IRP with reservations.

The 2020 Electric IRP planning process occurred during a period marked with significant legislative and regulatory changes for Avista and other utilities in Washington. The Washington

¹ In the IRP filed February 28, 2020, the Company changed the name to the 2020 Electric Integrated Resource Plan.

Energy Independence Act and the Clean Energy Transition Act (“CETA”) included additional renewable generation mandates, elimination of coal resources, and cost of carbon assignments, which required the Company to incorporate these constraints in addition to considering the replacement of resources that have become less economically viable with new technologies and favored CETA resource options. As a result, the Company’s resource choices may not align with least-cost/least risk resource planning guidelines in Idaho. Staff will continue to monitor developments in Washington to ensure that Idaho customers are held harmless if state-level policy differences impact resource planning costs.

There are several topic areas that Staff believes require additional analysis and review in the next IRP cycle, which began in June 2020. These include:

- Colstrip economic analysis, closure plans, decommissioning and remediation activities and cost studies
- Washington Clean Energy Transition Act and social cost of carbon
- Load forecasting
- Reliability analysis and reserve planning margin
- Pumped hydro and liquid air storage technology
- Demand Side Management and Energy Efficiency programs

Staff acknowledges the Avista IRP team’s work to solicit input and feedback from parties throughout the IRP process. Staff regularly observed the Company encouraging participation from a diverse array of stakeholders, including those new to the IRP process, and believes the Company considered feedback.

Preferred Resource Strategy

The Company’s portfolio scenario analysis in the 2020 Electric IRP was intended to support three important near-term resource decisions: (1) remove Colstrip from supplying energy to both Idaho and Washington after 2025; (2) evaluate the replacement energy and capacity that will be needed in 2026 and issue two Request for Proposals (“RFPs”); and (3) incorporate CETA and clean energy goals and related resource decisions. At Staff’s request, the Company provided supplemental analyses to support the decision to remove Colstrip in 2025, and to issue RFPs as identified in the Preferred Resource Strategy (“PRS”).

CETA implementation requirements were a significant challenge during this IRP as the Company's understanding of the legislation changed during the planning process. IRP at 11-1. The Company will include additional CETA rules in the next IRP as they become available. Staff is concerned that the PRS may be significantly influenced by Washington legislation that may have produced an overly optimistic consideration of emerging renewable technologies and resource acquisitions. Further, CETA-based planning decisions may have decreased system reliability and increased costs associated with reliability.

With the implementation of CETA rules, the Company reassessed resource adequacy to establish a suitable reserve planning margin resulting in an increase from approximately 16 percent to 18 percent in order to achieve the Company's 5 percent Loss of Load Probability ("LOLP") goal. With intermittent resources replacing existing resources with less variability, a higher planning margin is intended to provide assurance that the Company has enough energy to serve peak loads. However, Staff encourages the Company to further investigate potential PRS cost impacts associated with the increased planning margin driven by CETA.

Colstrip Coal Plant

The Company's PRS includes removing Colstrip as a resource for Idaho and Washington after 2025. This is a significant change from the 2017 IRP, where Avista stated they intended to run Colstrip until 2045. The Company has provided limited responses to Staff's repeated requests for analysis of Colstrip to support an appropriate date to remove Colstrip from service.

a. The 2017 IRP Colstrip analysis was incomplete.

At the request of the Washington Commission Staff, Avista analyzed several Colstrip scenarios in the 2017 IRP. While this analysis studied some issues, Idaho Staff remained concerned that many risks associated with Colstrip had not been adequately addressed. These concerns included; (1) uncertainty about coal supply and fuel costs because the mine depletion date was projected to occur in 2024;² (2) plant compliance investments (actual and projected), and outage and repair costs were not discussed; (3) uncertainty that the plant operator, Talen

² Westmoreland Coal, SEC Form 10-K at:
https://www.sec.gov/Archives/edgar/data/106455/000010645517000012/wlb-123116_10k.htm

Energy, would continue to operate the plant even when it was no longer economically viable;³ and (4) questions about whether the Rosebud contract for supplying coal to Colstrip Units 3 and 4 would be renewed. Staff's biggest concern was the absence of specific short and long-term plans for Colstrip in the 2017 IRP. Avista assured Idaho Staff that a more detailed and complete Colstrip analysis would be included in the 2019 IRP.

b. In the preliminary 2020 IRP PRS (November 2019, Avista proposed to retire Colstrip for Washington in 2025, but to keep it in service for Idaho.

Throughout the 2019-2020 IRP process, the Company's Colstrip analysis was insufficient and details about the Company's plan for Colstrip were unclear. During the same time, the news media reported multiple outages at the plant, economic challenges surfaced, and other owner-partners announced and then accelerated plans for decommissioning, remediation, and divestiture. Additionally, Staff learned through an article in November of 2019, which referenced a case with the Washington Utilities and Transportation Commission, that Colstrip Unit 4 needs an estimated \$20 million in repairs.⁴ Similar to its reluctance to discuss any aspect of Colstrip, the Company never disclosed this expense to the Idaho Commission, even though it presented a potentially significant future impact on Idaho customers.

On November 19, 2019, at the Company's sixth IRP stakeholder meeting, the Company presented its preliminary IRP analysis results and PRS. In the PRS, the Company proposed to treat Colstrip differently in Idaho and Washington. Colstrip would be considered offline for planning purposes and excluded from the Washington resource balance after 2025, but the plant would continue to serve Idaho after 2025. In discussion with the Company, Staff expressed concern that the Company was simultaneously planning for a Colstrip retirement and also for continued operation for Idaho. Avista agreed that there appeared to be a contradiction.

As a possible resolution to this issue, Avista considered the possibility of modeling the electric system separately for Idaho and Washington to create state-specific IRPs. Staff had concerns about developing the two states' resource plans and modeling them separately because it does not align with how the Company's resources are operated as a single system. Avista did not explain how they would implement this proposal.

³ Krysti Shallenberger, "Talen Energy will cease operating embattled Colstrip coal plant in 2018" Utility Dive, May 26, 2016.

⁴ Tom Lutey, "\$20M in repairs needed at Colstrip Unit 4, regulators say" Billings Gazette, Nov. 27, 2019; *see also* WUTC Docket UE-190529.

In addition to the disconnect between individual state planning and combined system operation, the preliminary PRS also raised questions about how the Company would handle Colstrip costs after 2025, in particular, the possibility that Idaho customers would be responsible for any decommissioning costs that were not known and allocated before Washington's 2025 exit from the plant.

c. In the 2020 Electric IRP PRS (February 2020), Avista proposed that Colstrip will no longer serve customers in Washington or Idaho after 2025.

When Avista filed its 2020 Electric IRP in February 2020, the Company's position on Colstrip changed. Colstrip is no longer included as a resource for either Washington or Idaho after 2025, with a depreciation end of life date of December 31, 2027 for Idaho. While the Company provided an analysis showing that a 2025 retirement date is more cost-effective than running the plant until 2035, the analysis was insufficient because the Company only compared those two retirement dates with each other rather than letting the resource optimization software select the most economic retirement date.

Staff requested that the Company perform additional economic analysis of Colstrip that allowed the IRP resource optimization software to select the most economic retirement date for the plant. The results of this analysis provided additional support for excluding Colstrip energy for Idaho after 2025, but resource adequacy with the early retirement of Colstrip was not included and should be evaluated in more detail.

Staff understands that Avista's status as a minority partner in the Colstrip plant and its existing contractual obligations may not align with an accelerated Colstrip retirement date for its Idaho customers. Nevertheless, Staff believes that a thorough economic analysis is a critical first step to establishing a least-cost/least-risk resource plan for Idaho customers.

d. Staff recommends the Commission require the Company to file an annual report on Colstrip.

Staff is concerned with the Company's statement that they need to *start* evaluating contractual obligations for units 3 and 4 if both units continue to operate after 2025 and consider extending or making arrangements to provide its share of coal to operate their Colstrip units. IRP at 4-21. Despite Staff requests for Colstrip information regarding operation and retirement, the Company has been consistently unresponsive and has not discussed how it will communicate future plant considerations with stakeholders. Now that the date to eliminate Colstrip energy has

been accelerated from 2045 to 2025 in a single IRP, it is even more critical that the Company regularly and clearly communicates about the economics and strategy for the Colstrip plant.

In order to ensure this information is provided in a timely manner, Staff recommends the Commission order the Company to file an annual report on Colstrip to keep stakeholders more fully informed on developments. This annual report should include an updated economic analysis, estimated retirement dates, closure plans, a progress report on Colstrip closing plans and activity, and an annual accounting for decommissioning and remediation expenditures/estimates. Staff also recommends the Commission order the Company to notify the Commission within 30 days of partner decisions and plant issues that could impact Idaho customers.

Washington's Energy Independence Act, CETA, and Avista's Clean Energy Goals

Throughout the 2020 IRP, the Company explored how the IRP will comply with the Washington Energy Independence Act and CETA. The Washington Energy Independence Act establishes a Renewable Portfolio Standard ("RPS") with renewable energy targets as a percentage of customer load, while the CETA mandates renewable energy investments and assigns a social cost of carbon. CETA incents utilities to replace fossil fuels to reduce greenhouse gas and achieve state climate goals. During this IRP cycle, Avista also announced two clean energy goals: to achieve a carbon neutral supply of electricity by 2027, and serve customers with 100% clean electricity by 2045.

There is a large gap between the Company's current resource portfolio and the acquisition of clean energy generation or Renewable Energy Credits ("REC") required to achieve its 2027 carbon neutral energy goal. Staff is concerned that CETA and the Company's carbon neutral goals may change how the Company values its resources and influence the resources it pursues, potentially increasing costs. Staff believes CETA and Avista's clean energy goals may have influenced the Company to pursue wind, solar, storage, and pumped hydro to replace Colstrip and the Lancaster gas PPA in 2026. The Company has not demonstrated that these proposed replacements are least cost, least risk, and in some cases, even realistic resources.

Staff has been evaluating CETA and Avista's clean energy goals to ensure they do not inappropriately increase costs for Idaho customers. In response to Staff concerns, the Company stated that the tracking and allocation of costs between Idaho and Washington related to CETA

and Company clean energy goals may be better dealt with in a rate case or other forum rather than the IRP. While that may be reasonable, it is important to understand which resource decisions were driven by state-specific legislative requirements and which were driven by economics in order to correctly assign costs to each state. Those cost-causation decisions are best understood through the IRP process.

Load Growth Models

Staff is concerned that the Company's peak load forecasting methodology may underestimate peak load growth. Staff is also concerned that the Company has incorrectly identified winter peaking events, rather than summer peaking events, as the primary drivers of capacity expansion. The Company's peak load growth forecast is a primary factor in the Company's planning process, and forecasting errors will likely result in incorrect assumptions about the need and timing of decisions to acquire and decommission generation resources. Staff found a number of substantive errors in the text and equations of Chapter 3 (Economic and Load Forecast) of the Company's IRP.

The Company's peak load forecast assumes that the Company will remain a winter peaking utility through calendar year 2045, and that winter and summer peak loads will increase at 0.3 percent per year and 0.4 percent per year, respectively. IRP at 3-18. Staff is not convinced that these assumptions are sound. Although historically a winter peaking utility, summer peaking events have become more common in recent years. In fact, the Company's system peak has occurred during the summer in six out of the past ten years. Although the Company's winter peak has grown at a modest rate of 0.2 percent per annum, its summer peak has grown at a rate of 0.8 percent per year, or twice the rate assumed in the Company's 2020 IRP. *See Figure No. 1.*

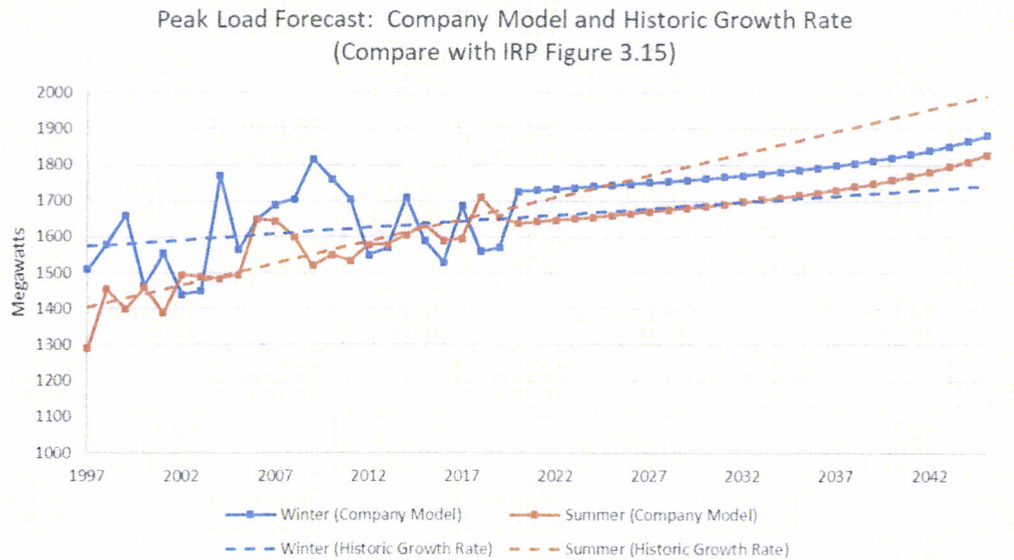


Figure No. 1: The Company's model assumes that Avista will remain a winter peaking utility throughout the IRP planning period; however, the data indicates that the utility is currently a mixed summer/winter peaking utility. Given current trends, Staff believes it likely that summer peaking events will dominate over the IRP planning period.

The 2020 IRP acknowledges the importance of summer peaking events, and even includes an account of how a multi-day summer peaking event in July 2006 spurred the Company to investigate Demand Response (DR) programs. According to the Company, this event led Avista to "request DR through media outlets..." and to initiate "short-term agreements with large industrial customers to curtail loads." IRP at 6-1.

In addition to the Company's assumptions about relative summer/winter peaking growth rates, two other factors contribute to the Company's low peak load growth estimates: The Company's low customer growth rate estimates, and its low per customer usage estimates. The Company's estimated customer growth rate is 0.78 percent, or about 2/3rds the Company's historical 1.2 percent growth rate. IRP at 3-15. Residential customer growth estimates were derived from complicated econometric models with large autoregressive components. IRP at 3-10 and 3-11. Although autoregressive components can improve a statistical model's ability to describe past events, their inclusion does not necessarily yield better predictions of future events than would be obtained using a simpler model. In fact, use of autoregressive components can destabilize a statistical model and decrease its predictive power. In short, autoregressive components can improve statistical measures of model quality such as R-squared without improving the model's ability to predict future peak load growth.

Staff discovered that the Company's discussion of its Usage per Customer ("UPC") forecasts contain several substantive errors and does not fully describe the model actually used by the Company in its forecast. Company's Response to Production Request Nos. 19, 20, and 22. Staff is also concerned that instead of modeling the maximum peak load that could be reasonably expected to occur in a given calendar year, the Company has modeled average peak load. Company's Response to Staff's Production Request No. 20. Using average peak, rather than maximum peak, underestimates the peak demand that the system is likely to serve.

Staff also believes that the Company should not have assumed a decrease in consumption due to increasing electrical prices. The Company assumed that the real price of electricity will increase over the next 25 years, and that this increase will result in decreased electrical consumption. Using its own billing data, the Company was unable to find any relationship between electrical prices and UPC within its own service territory, and instead used a regional estimate of -0.3 percent obtained from an academic paper. Given the Company's inability to identify an elasticity component using its own billing data, and given the large variation inherent in elasticity estimates, Staff does not believe that the Company should have included price elasticity in its analysis.

By underestimating peak load growth, Staff is concerned that the Company's IRP likely understates the expenditures in production and storage plant that will be needed to offset retirement of its thermal plant over the next 25 years.

Natural Gas Forecast

As part of the resource evaluation process, the Company used a statistical distribution of price inputs, such as gas prices and electric wholesale prices, to help forecast how much their generation resources will cost to dispatch and determine the resources the Company will use to serve customers. The Company also used these future market price forecasts to optimize their PRS. IRP at 10-1.

In 2019, the Northwest region continued to see a shift away from the use of coal, but natural gas prices remained low. The Company used the 20-year Stanfield natural gas forecast at \$3.47 per dekatherm ("dth") and adopted a 20-year wholesale electric price at \$26.44 per Megawatt-hour ("MWh"), and predicted that natural gas prices will continue to be low. This is a

notable decrease from the \$4.20 per dth presented in the 2017 IRP and a 20-year wholesale electric price that was \$35.85 per MWh.

The effects of the pandemic on natural gas prices remain to be seen. Natural gas markets have experienced significant price volatility in 2020 due to a decline in crude oil demand, reducing the amount of associated gas supply and driving up natural gas prices. Overall economic activity has also reduced electricity demand from industrial, commercial and residential customers, driving down the need for natural gas generation of electricity. Staff reserves further critique of the Company's considerably low gas and electric prices presented in the 2020 Electric IRP until anomalies in the market are resolved.

Supply Side Resources

Combined Cycle Combustion Turbine ("CCCT")

Avista modeled five types of CCCT in the 2020 IRP, ranging from 235 MW to 480 MW. The Company believes the most likely location for a new CCCT is in Idaho because of favorable tax considerations and access to low-cost natural gas from the Gas Transmission Northwest pipeline. The Company has already secured a plant site in case a capacity resource is needed. IRP at 9-3. While efficiency of CCCT plants has improved, the drawbacks of this resource are its reliance on natural gas and the new regulatory challenges the Company will face with CETA and cost of carbon assignments, both of which introduce additional risk for acquiring a natural gas plant.

Energy Storage

According to the Company, "Energy storage will be key to removing carbon-emitting resources from our portfolio; our plans for combining long duration pumped hydro, liquid air energy storage ("LAES") and lithium-ion technology provide the reliable capacity required to meet long cold winter periods where weather-and sun-dependent renewable resources do not always contribute to load service." IRP at 1-6. Staff agrees that energy storage will be necessary to enable intermittent generation resources such as wind and solar but believes the assessment of some of the storage options presented in the 2020 IRP are overly optimistic. In particular, Avista's estimate of \$1,457 per kW for LAES is predicated on a round trip efficiency of 65

percent to 75 percent. Staff doubts that such round trip efficiencies will be obtainable during the 2020 IRPs 25 year planning horizon. IRP at 9-14 and 9-15.

The term Liquid Air Energy Storage is a misnomer, since the technology does not actually store energy. Instead, LAES systems work by removing energy from air (or Nitrogen), liquifying it, and allowing it to be used as the working fluid in a conventional heat engine, much as water is used as a working fluid in a steam engine: An external source of energy must still be supplied to vaporize the liquified air/nitrogen. Because the liquified air/nitrogen is extremely cold (about -321 F), ambient air can be used to supply the heat needed to vaporize the air/nitrogen. The efficiency of the LAES depends on the temperature of the ambient air used to heat the working fluid.

The second law of thermodynamics sets an upper bound on the efficiency of thermal engines such as steam engines, internal combustion engines, and LAES. This upper bound, called the Carnot efficiency, is not actually obtainable in practice, and real-world efficiencies are usually around half the Carnot efficiency. Although the Carnot efficiency of an LAES using ambient air at 70F is about 74%, its actual efficiency is expected to be less than 40%.

Currently, very little research is being conducted on LAES: Only three of the 1,695 Energy Storage projects listed on the Department of Energy's ("DOE") Global Energy Storage, and only one of those has ever been commissioned. A pilot project completed in 2015 at the University of Leeds achieved an efficiency of about 15 percent. All three LAES projects listed in the DOE's Global Energy Storage Database are being promoted by the same investment firm: Highview Energy.⁵

To boost the efficiency of its LAES plants, the Company plans to use waste heat from its thermal plants. IRP at 9-14. With Company plans to decommission most of its thermal plants by the year 2045, Staff believes this plan to be unworkable. When asked to explain the apparent discrepancy, the Company responded that it might be possible to supply heat with either hydrogen or renewable natural gas. Staff notes that neither of these relatively expensive fuels is discussed in the 2020 IRP. Response to Staff Production Request No. 28.

⁵ DOE OE Global Energy Storage Database, at: <https://www.sandia.gov/ess-ssl/global-energy-storage-database-home/>

Given the centrality of energy storage to the Company's clean energy goals, Staff believes that future IRPs must provide a more detailed and realistic analysis of energy storage options.

Intermittent Generation Costs

The Company must maintain a reserve of rapidly dispatchable resources to compensate for fluctuations in power obtained from unpredictable, or intermittent energy sources such as wind and solar. Using the results of a 2007 study, the Company determined that the costs of maintaining this reserve would add \$5 per MWh of energy obtained from wind resources, and \$1.80 per MWh of solar generated energy. IRP at 9-24. In future IRPs, Staff believes that this study should be updated to reflect the planned increase in intermittent energy sources.

Ancillary Services Study

Resources such as natural gas peaker plants, hydroelectric generation, and storage projects can provide benefits to the electrical system beyond supplying energy and capacity in the form of frequency response or contingency reserves. IRP at 9-25. The Company has established value estimates for resources such as natural gas-fired CT/reciprocating engine, batteries, battery solar combined systems, pumped hydro, and liquid air storage. IRP at 9-26. The Company proposes to continue studying the ancillary benefits of these technologies and is developing a software model (ADSS) to perform additional analysis.

Reliability Analysis

Reliability analysis is becoming increasingly important as more variable and energy-limited resources are brought onto the system and as thermal resources are considered for retirement or phased out. Additionally, Staff concludes that assigning a single Planning Reserve Margin ("PRM") to all portfolio scenarios can create unreasonable comparisons and the Company's reliability analysis needs to include verification of reliability across multiple years and multiple portfolios.

Changing environmental policy and economics are driving the increase of variable and energy-limited resources being included in the Company's resource mix and driving earlier coal

plant retirements. These changes in the Company's resource mix can create reliability issues due to less firm capacity being available at system peak under certain operating conditions.

The 2020 IRP is the first time the Company has conducted a reliability analysis on the PRS by performing a verification of its reliability by measuring its LOLP. IRP at 11-11. Prior IRPs relied upon a single benchmark PRM for all portfolio scenarios along with high levels of dispatchable resources to provide sufficient reliability. *Id.* However, using these past methods when comparing divergent portfolios that use increasingly more variable and energy-limited resources becomes especially problematic when considering that the PRM may need to be different depending on the resource mix of different portfolios. Although Staff believes the 2020 IRP reliability analysis method is an improvement over past IRP methods, there is still room for improvement in future IRPs. Staff believes there are two areas of potential improvement: (1) less reliance on a single generic PRM, and (2) more extensive reliability verification across multiple portfolios and timeframes.

Reliance on Single PRM

Assigning a single PRM to all portfolio scenarios can create unreasonable comparisons because it may produce portfolios without equal amounts of reliability. To achieve equivalent cost comparisons, each portfolio needs to meet similar reliability standards. However, the Company's method identified a single PRM of 18 percent that was applied to all portfolio scenarios. Staff believes this can result in cost comparisons of different resource portfolios with unequal LOLP, biasing the result.

The approach the Company used in its analysis was to determine a PRM that could be applied to all portfolios by measuring the amount of reserves necessary to achieve a LOLP of near 5 percent for the PRS. Five percent is the current LOLP standard used by the Northwest Power and Conservation Council. IRP Appendix at 982. By simulating the dispatch of the PRS across 1,000 potential scenarios by varying load, wind and hydro conditions, and forced outage rates for each hour for a single year (2030), the Company was able to determine the amount of reserves necessary to ensure more than 95 percent of the 1000 simulations met all load requirements for the entire year. *Id.* at 11-11.

However, applying a single PRM to all portfolios is inadequate for cost comparison when the resources in those portfolios have large differences in the amount of variable and energy-

limited resources. Staff expects portfolios with more dispatchable resources and less variable and energy-limited resources to need lower amounts of capacity reserves and associated costs, while the opposite would be true for portfolios with lower dispatchable resources and higher variable and energy-limited resources. Because the Company applied the same level of PRM regardless of the portfolio, Staff believes that the cost difference between portfolios are not equivalently comparable.

Reliability Analysis Verification

Staff believes the Company's reliability analysis should include verification of reliability across multiple years and on multiple portfolios. The 2020 IRP reliability analysis was performed on one portfolio and tested on a single year. The PRS is the only portfolio subjected to reliability analysis, and 2030 is the only year that was tested in the analysis. The ideal analysis would verify that all portfolios and all years of the IRP timeframe meet reliability requirements. Testing all portfolios and years of the IRP timeframe would help verify the portfolios meet reliability requirements and help create better cost comparison between portfolios.

The Company stated that the reason for limited reliability analysis is due to long processing times with the current modeling software and limited time to conduct the analysis. Production Request Response No. 15. The Company is exploring options to reduce processing times so more portfolios and years can be tested in the future. *Id.* Staff understands testing all portfolios and years in the IRP may not be possible with the current modeling software but encourages the Company to increase the number of portfolios and years tested in the next IRP.

Energy Efficiency and Demand Response Programs

In the 2020 IRP, all portfolios studied by the Company rely on energy efficiency and demand response programs to offset the need for new resources. IRP Chapter 12. However, Staff has unresolved concerns that the Company may have overestimated the peak reductions that can be produced by these programs.

Staff's concerns about the accuracy of the savings reported by the Company's energy efficiency programs were identified in a Stipulation and Settlement ("Stipulation") recently

signed by the Company and Commission Staff and approved by the Commission in the Company's most recent energy efficiency prudency case (Order No. 34647, Case No. AVU-E-18-12). Staff looks forward to the improvements outlined in the Stipulation and will review the results of the Company's revised methodology for estimating the peak reductions attributable to the Company's energy efficiency programs when it becomes available. Staff was, and still is, concerned that the Company's method for estimating energy efficiency savings overstates the peak load reduction actually obtained from these programs.

Staff is also concerned with the Company's practice of including average megawatt ("aMW") savings in its portfolio analysis. Tables 12.1 through 12.15. The aMW savings is simply the total number of megawatt hours saved divided by the number of hours in a year (8,760), without regard to whether or not the program achieves any reduction during hours of peak demand. In future IRPs, Staff believes that the Company should report and conduct its analyses with the peak reduction achieved by its energy efficiency measures, and not the aMW savings.

In its discussion about the Company's Load Growth models, Staff expressed concern that the Company has incorrectly identified winter peaking events, and not summer peaking events, as primary drivers of capacity need. Many DR and energy efficiency programs are most effective during specific times of the year. For example, the Company's fuel shifting programs incent customers to convert from electrical heat to natural gas heat, thereby reducing winter peak load; however, fuel shifting programs have no impact on summer peaking events. Staff is concerned that the Company's focus on winter peaking events may result in acquisition of energy efficiency and DR resources that are ineffective at reducing summer peak loads.

Between 2007 and 2014, the Company conducted multiple residential DR pilot programs. IRP at 6-1 and 6-2. The first pilot tested Direct Load Control devices on residential heat pumps, water heaters, electric forced air furnaces, and air conditioners in households in Sandpoint and Moscow. In the second pilot, Avista provided customers a display device that provides near-real time energy-usage. As part of a Smart Grid demonstration project, the Company provided a Smart Communicating Thermostat to a group of customers, which allowed the Company to control customer loads and receive real-time feedback of actual load reduction, during a DR event. Even when the Company provided and installed the equipment, and provided direct premium incentives, the Company reported that they had difficulty recruiting customers into the

program. Staff agrees with the Company that, "Where Avista is not able to harness adequate customer interest at cost-effective incentive levels, the future of DR could be more limited than assumed in this IRP." IRP at 6-2.

Load and Existing Resource Balance

The load and resource balance presented in Chapter 7 of the IRP identifies the Company's capacity and energy deficiencies before identifying the resources that will be used to economically meet future load and reliability needs. The capacity deficiency information is also used in a biennial capacity deficiency filing, which occurs after the acknowledgement of the IRP, to determine avoided cost rates under PURPA. Based on the load and resource balance, Avista's system first becomes capacity deficient during the 2026 winter peak. (See Figure 7.2 and 7.3 of the Company's 2020 Electric IRP).

PURPA Capacity Deficiency Date

The capacity deficiency in the load and resource balance, both the timing and the amount of the deficiency, will be used to determine when new PURPA contracts are eligible to receive capacity payments. Staff is concerned by the inclusion of a Colstrip early retirement at the end of 2025 in the load and existing resource balance for purposes of determining the capacity deficiency date.

The load and existing resource balance identifies resource deficiencies in the Company's system acting as a starting point for developing and evaluating future resource portfolios. A decision to close a plant early should be evaluated against other alternatives that maintain system reliability and should be made as part of the portfolio development and evaluation phase of the IRP. Regardless of whether the closure decision is driven by economics or by environmental compliance, one should choose the least cost alternative that maintains system reliability, which likely requires additional replacement resource(s). The Company has reflected a 2025 Colstrip early retirement in the load and resource balance contained in Figures 7.1 and 7.2 (2019 IRP), which Staff believes is improper for purposes of establishing a first capacity deficiency date for PURPA.

RFPs to Address Capacity and Energy Deficiencies

With a capacity deficit projected in January of 2026, Avista plans to acquire new energy and capacity resources through two RFPs to fill shortfalls created by the removal of Colstrip in December 2025, and the Lancaster natural gas PPA expiration in October 2026. IRP at 11-4.

Under this strategy, the Company issued a renewable energy resource RFP for up to 120 aMW in June 2020, with delivery planned for 2022. The Company may issue a capacity RFP in 2021 to identify and compare potential capacity alternatives should they determine that pumped storage resources, which they propose to add 175 MW of in 2026, are not desirable or cost effective. IRP at 11-5. The Company also states it will acquire new energy and capacity resources to meet clean energy goals and “may require resources other than those identified as preferred due to actual pricing, lack of availability, the reliability benefits not materializing, or the inability to meet state laws.” IRP at 11-3.

Staff is concerned that the Company has proposed to use near-term, frequent, and vaguely defined RFPs to fill energy and capacity gaps in its planning forecast. Staff notes that the Company’s resource plan includes at least two resources, pumped hydro and LAES, that even the Company admits may not be viable. Staff does not believe that large and frequent RFPs are an adequate resource strategy.

Public Workshop

On July 9, 2020, Staff hosted a WebEx Public Workshop to discuss the Avista 2020 Electric IRP with customers and stakeholders. Staff explained the case timeline, how customers could participate in the utility IRP process and contribute to the case record and provided an overview of the IRP and how it is evaluated at the Commission. Staff also discussed Washington’s CETA legislation and Avista’s clean energy goals that may change how the Company evaluates, acquires, and allocates future investments and energy resources. Finally, Staff discussed its evaluation of Colstrip plant economics.

Staff appreciates the contributions and enthusiasm of participants at the workshop, which revealed considerable public interest and an impressive understanding of the Company’s planning process. Commenters expressed support for Avista’s carbon neutral energy targets and the early retirement of Colstrip and urged the timelines for these actions to be accelerated. Many customers expressed concern for how risk is evaluated in the IRP process and were particularly

concerned with risk associated with indirect costs such as environmental impacts, climate change, and health risks. Several customers requested the Commission direct the Company to adopt social cost of carbon calculations in Idaho and to extend environmental impact analysis for Idaho customers to quantify the health risks associated with utility resources. Customers urged the Commission to consider direct environmental and health impacts of climate change when evaluating the risks and benefits of different resource decisions.

Public Hearing

On August 5, 2020, the Idaho Commission conducted a Public Hearing to take testimony from members of the public and Avista customers on the Company's 2020 IRP. Participants shared similar support and concern for topics also expressed during the workshop, with thirty-five members of the public speaking in favor of Avista's IRP but encouraging a more rapid move away from carbon emitting resources. Participants encouraged the Commission to promote renewable energy opportunities in Idaho, to order Avista to include the social cost of carbon and environmental impacts in Idaho IRP planning, and to accelerate the timeline for Avista's clean energy goals and the transition to clean energy resources.

There was broad support for the Company to accelerate its clean energy goals, both the goal for a carbon neutral supply of electricity by 2027, and the 2045 goal to serve customers with 100% clean electricity. Several people expressed concern about the Company treating Idaho and Washington separately, which they believe creates fractured planning and promotes cost and risk in Company resource decisions. Many participants stated that the Commission and Avista need to take action to establish and support clean energy goals in Idaho to prevent further environmental damage and negative impacts to Idaho businesses and outdoor opportunities. Customers testified about the importance of protecting local Idaho lakes, rivers, fish, and the quality of life they know and appreciate. Customers encouraged the Commission to do its part to slow climate change and to mitigate local impacts.

A summary of customer feedback provided in the public hearing:

- Fifteen participants stated they want Avista to accelerate its Clean Energy Goals timeline
- Twelve participants stated they want the Social Cost of Carbon included in the Company's Idaho IRP
- Accelerate the closure of Colstrip to mitigate financial risks

- Support renewable energy and related jobs in Idaho
- Implement new technology, including residential battery storage and pumped storage
- Support for energy conservation
- Support for retiring RECs in Idaho rather than selling them out of state
- Evaluate microgrid solutions
- Expand stable power sources like hydro and nuclear power

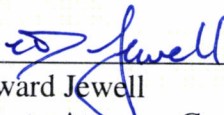
Customers also asked the Commission to take a leadership role to make regulatory and state policy changes that support clean energy and include costs for the social and economic impacts of energy resources used in Idaho, even if it results in a utility strategy that may not be least cost from a strictly financial perspective. Idaho customers at the public hearing voiced their hope that Idaho government, the Idaho Commission, and utilities will respond to their concerns on these issues. They believe that agencies such as the IPUC have the responsibility and authority to take action to address climate change.

STAFF RECOMMENDATIONS

After reviewing the Company's 2020 Electric IRP, Staff believes the Company performed sufficient analysis, gave reasonably equal consideration of supply and demand-side resources, and provided opportunities for public input to satisfy the requirements of Order No. 22299, but with reservations more fully explained above. Staff recommends:

1. The Commission acknowledge the Avista 2020 Electric IRP.
2. The Commission order the Company to report on its progress to evaluate the Colstrip retirement in an annual Colstrip report. This report should include updated economic analysis of retirement dates, closure plans and estimated retirement dates, and annual accounting for decommissioning and remediation expenditures/estimates.
3. The Commission order the Company to notify the Commission within 30 days of Colstrip partner decisions and plant issues that may materially impact Idaho customers.

Respectfully submitted this 19th day of August 2020.



Edward Jewell
Deputy Attorney General

Technical Staff: Rachelle Farnsworth
Michael Eldred
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Yao Yin

i:umisc/comments/avue19.1ejrfmemmy comments on 2020 IRP

CERTIFICATE OF SERVICE

I HEREBY CERTIFY THAT I HAVE THIS 19TH DAY OF AUGUST 2020, SERVED THE FOREGOING **COMMENTS OF THE COMMISSION STAFF**, IN CASE NO. AVU-E-19-01, BY E-MAILING A COPY THEREOF, TO THE FOLLOWING:

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